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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/976,543
Filing Date: October 12, 2001
Appellant(s): GRABARNIK ET AL.

William E. Lewis
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 1/19/2007 appealing from the Office action mailed 6/1/2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,006,213	YOSHIDA	12-1999
5,345,380	BABSON	9-1994
6,249,755	YEMINI	6-2001

6,108,698 TENEV 8-2000

Mishra, D. "SNOOP: An Event Specification Language for Active Database Systems" Thesis presented to the graduate school of The University of Florida. 1999.

Bettini et al. "Testing Complex Temporal Relationships Involving Multiple Granularities and its Application to Data Mining" ACM. 1996

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1,3 and 16 are rejected under 35 USC 103(a) as being unpatentable over Mishra D., (SNOOP: An Event Specification Language for Active Database System, Thesis from U. of Florida, 1991) in view of Yoshida (US Patent 6006213).

Regarding claim 1, Mishra teaches a computer-based method (Mishra, P.57, l. 1-3, event compiler with the algorithm) for use in accordance with an event management system, the method comprising the steps of:

- automatically generating one or more event relationship network from event data, wherein an event relationship network comprises a graphical representation wherein nodes representing events and links connecting correlated nodes

(Mishra, Pg.57, 1.2-3, 6, Pg.58, 1.2-8, compiler converts the event expression in the input and building the graph, the event graph comprises the nodes represent composite events and link represent the path send to the nodes); and

Mishra discloses the automatically generating the event relationship network from event data, he fails to mention the utilization of the event graph to construct the correction rules.

However, Yoshida teaches:

- utilizing the one or more generated event relationship networks to construct one or more correlation rules for use by a correlation engine in the event management system (Yoshida, co1.2, 1.45-49, in which the extract patterns corresponds to the event graph, and the conversion into rules for high speed operation (correlation engine)).

It would have been obvious to one ordinary skilled in the art at the time the invention was made to include the teaching of Yoshida for correlation rule used by the correlation engine.

The motivation would be for Mishra to combine with Yoshida is to achieve the extracting a set of patterns frequently appearing in the graph, evaluating the extracted pattern based on the resulting graph size reduction, and outputting a pattern having a good evaluation result (Yoshida, co1.1, 1.60-65).

2. Claims 2,and 15 are rejected under 35 USC 103(a) as being unpatentable over Mishra D., in view of Yoshida and further in view of Babson et al., (US Patent No. 5345380).

Mishra, and Yoshida teach the event graph generation automatically, and utilize the correlation rule for the correlation engine, but lack of the teaching of human review prior to utilize the event graph.

However, regarding 2, Babson teaches further discloses the method of claim 1, further comprising the step of subjecting the one or more generated event relationship networks to human review prior to utilizing the one or more generated event relationship networks to construct the one or more correlation rules (Babson, co1.2, l. 64-67, col. 3, l. 1-10, in which the presenting the customer with a plurality of type of nodes, receiving from the customer indication of desired relationships between the desired nodes).

It would have been obvious to one ordinary skilled in the art at the time the invention was made to include the teaching of Babson for human review prior to correlation engine.

The motivation would be for combining Mishra, and Yoshida to presentthe event graph to human review to receive from the customer values for parameters to be used with the desired nodes; and construction of a graphical representation of the desired nodes; and to provide the desired service. (Babson, Abstract, col.3,1.5-9)

Regarding claim 3, Mishra further discloses the method of claim 1, wherein, when one or more previously generated event relationship networks are available, the step of automatically generating one or more event relationship networks comprises:

- obtaining one or more previously generated event relationship networks (Mishra, Pg. 57, l. 10, read rule-definition corresponds to the obtaining the previous event graph);
- validating the one or more previously generated event relationship networks by removing any nodes or links included therein that are incorrect for a particular application context (Mishra, Pg. 57, 1.12, define corresponds to the rule event1 and rule-event2, and modify part of the original rule);
- completing the one or more previously generated event relationship networks by adding any nodes or links thereto that are missing for the particular application context (Mishra, Pg. 57, 1.18, build-tree corresponds to the completing the event graph);
- outputting the one or more validated and completed event relationship networks as the one or more event relationship networks used to construct the one or more correlation rules (Mishra, Pg. 57, 1o14,& 1.20, in which the create rule and merge it in the event forest corresponds to the outputting and completed event graph).

3. Claims 4-7, 11,13, 17-20, 24, and 26 are rejected under 35 U.S.C 103(a) as being unpatentable over Mishra in view of Yoshida, and further in view of Yemini et al., (US Patent 6249755).

Regarding claims 4, Mishra, and Yoshida differ from the claimed invention in that Mishra does not disclose the statistical correlation analysis. However, Yemini further

discloses the method of claim 3, wherein the validating and completing steps utilize a statistical correlation analysis (Yemini, col. 13, l. 10-20).

It would have been obvious to one ordinary skilled in the art at the time the invention was made to include the teaching of Yemini for event correlation analysis by using graphic model (Yemini, co1.17, 1.40-50 col.24, 1.29-37)..

The motivation would be for combining Mishra and Yemini is to execute computer code efficiently determining problem events from observable symptoms. (Yemini, Abstract, col.7, 1.64-67)

Regarding claim 5, Yemini further discloses the method of claim 4, wherein the statistical correlation analysis utilizes pairwise correlation analysis, wherein correlation between a pair of events is measured in accordance with one or more statistical measurements (Yemini, col.17, 1.59-65).

Regarding claim 6, Yemini further discloses the method of claim 3, wherein the validating step comprises, for a particular event relationship network, determining that links in the event relationship network have a confidence level not less than a given threshold (Yemini, co1.25, 1.9-11).

Regarding claim 7, Yemini further discloses the method of claim 3, wherein the validating step, for a particular event relationship network, comprises:

- splitting the event relationship network into correlation paths (Yemini, col.19, 1.23-33, in which the classifies corresponds to split);
- for every correlation path, removing a node that has the least number of correlated nodes associated therewith until every node is fully correlated with every other node (Yemini, col.25, 1.9-13); and
- merging correlation paths into one or more event relationship networks such that every path in a resulting event relationship network has every node fully correlated with every other node in the path (Yemini, col. 17, 1.59-65). Regarding claim 11, Yemini further discloses the method of claim 1, wherein the event data is obtained from an event log representing historical events associated with a particular system being managed by the event management system (Yemini, col. 11, 1.32-36, col.24, 1.57-67, col.25, 1.1-8).

Regarding claim 13, Yemini further discloses the method of claim 1, wherein the event data is preprocessed prior to use in generating the one or more event relationship networks by removing at least a portion of any redundant events (Yemini, col.8, 1.7-10).

Claims 8-10,12, 21-23 and 25 are rejected under 35 U.S.C 103(a) as being unpatentable over Mishra in view of Yoshida, in view of Yemini et al., and further in view of Bettini et al., (Title: Testing complex temporal relationship involving multiple granularities and its application to data mining, 1996 ACM).

As mentioned above, Mishra, Yoshida, and Yemini disclose the limitations of event relationship network, but fail to teach the mining pattern.

However, regarding claim 8, Bettini further discloses the method of claim 1, wherein, when one or more previously generated event relationship networks are not available, the step of automatically generating one or more event relationship networks comprises:

- mining patterns from the event data (Bettini, page 74, 1.32-50, in which the mining process (mining pattern) derived from event structure (event data) is effective);
- utilizing the mined patterns to construct the one or more event relationship networks (Bettini, page73, figure 2));
- outputting the one or more event relationship networks constructed from the mined patterns as the one or more event relationship networks used to construct the one or more correlation rules (Bettini, page 74, 1.3-5, step 2 gives a general rule to reduce the length of the input event..).

It would have been obvious to one ordinary skilled in the art at the time the invention was made to include the teaching of Bettini for obtaining data mining structure.

The motivation would be for combining Mishra, Yoshida, Yemini and Bettini is to process data mining in the procedure and find the temporal patterns, i.e. instantiations of the variables in the structure.

Regarding claim 9, Bettini further discloses the method of claim 8, wherein the constructing step utilizes a statistical correlation analysis to mine patterns (Bettini, page 71, theorem 1, 1.30-32 the event X0 occurrence between month in a year is a statistical correlation analysis).

Regarding claim 10, Bettini further discloses the method of claim 8, wherein the statistical correlation analysis utilizes pairwise correlation analysis, wherein correlation between a pair of events is measured in accordance with one or more statistical measurements (Bettini, figure 1).

Regarding claim 12, Bettini further discloses the method of claim 1, wherein the one or more event relationship networks comprise annotations relating to statistical correlation between nodes (Bettini, page 71, figure 1,the annotation on the link between nodes related to statistical correlation).

Regarding claims 14, 16, 27 have similar limitations as claim 1. Therefore, claims 14,16, 27 are rejected for the same reasons set forth in the rejection of claims 1.

Regarding claim 15 has similar limitations as claim 2. Therefore, claim 15 is rejected for the same reasons set forth in the rejection of claim.

Regarding claims !7-20, 24, and 26 have similar limitations as claims 4-7, 11 ,and 13. Therefore, claims 17-20, 24, and 26 are rejected for the same reasons set forth in the rejection of claims 4-7, 11 and 13.

Regarding claims 21-23, and 25 have similar limitations as claims 8-10, and 12. Therefore, claims 21-23, and 25 are rejected for the same reasons set forth in the rejection of claims 8-10, and 12.

Claims 28 and 29 are rejected under 35 USC 103(a) as being unpatentable over Mishra D., in view of Tenev (US Patent 6108698).

Mishra discloses the automatically generating the event relationship network from event data, Mishra does not specifically disclose to compute a first correlation metric and second correlation metric.

However, Regarding claim 28, Tenev further discloses the method of claim 1, further wherein automated generation of at least one of the one or more event relationship networks comprises use of an automated pairwise statistical correlation procedure which is configured to compute a first correlation metric and a second correlation metric, the second correlation metric being representative of a correlation between events that is stronger than a correlation between events represented by the first correlation metric (Tenev, col.9, 1.32-45).

Because knowing that the directed graph data structure is relevant to the rules performed by the grapher, it would have been obvious to use the directed graph data

structure in the Mishra's algorithm. Therefore, the claimed invention would have been obvious to one of ordinary skill in the art at the time of the invention.

Regarding claim 29, Tenev further discloses the method of claim 1, further wherein automated generation of at least one of the one or more event relationship networks comprises specifying an event data window within which event data is considered (Tenev, col. 13, l.28-39).

(10) Response to Argument

Issue 1: Appellant argues that the Mishra/Yoshida does not disclose automatically generating one or more event relationship networks from event data, wherein an event relationship network comprises a graphical relationship wherein nodes represent events and links connect correlated nodes.

Appellant further argues that the event graph of Mishra is not an event relationship network that can be used to construct one or more correlation rules for use by a correlation engine in an event management system.

Referring to the specification, there appears to be no explicit definition that has a limiting effect on the claim, though Appellant does state, on page 7 lines 6-10 that "An ERN is a directed cyclic graph." Unfortunately, from reading the specification, it is not clear in the least what is meant by "a directed cyclic graph." However, it is clear that an ERN, or event relationship network, is an event graph, though disclosed in the

specification as being of a directed cyclic form. However, figures 5 and 6 of the instant specification do show the stratification of the event relationship network. It is apparent that an event relationship network in directed cyclic form includes a node and a link. As such, the broadest reasonable interpretation of an event relationship network appears to be an event graph of a form that includes nodes or elements with links of some sort connecting the nodes.

Accordingly, the event graph of Mishra does constitute an event relationship network, as required by the claim. As indicated in the Office Action mailed 6/1/2006, in the event graph, the nodes represent composite events and the link represents the path sent to the nodes.

Appellant further asserts that the claimed invention generates one or more event relationship networks from event data and utilizes the one or more generated event relationship networks to construct one or more correlation rules, and the "event compiler" and "event graph" of Mishra does not do this. As already explained, Mishra does disclose the limitation of generating one or more event relationship networks from event data. As for utilizing the one or more generated event relationship networks to construct one or more correlation rules, this is the functionality that was relied upon in Yoshida.

Issue 2: Appellant argues that the Examiner has failed to identify a cogent motivation for combining Mishra and Yoshida in the manner proposed.

It is noted however, that a motivation was provided that demonstrated that additional functionality would be found by combining Mishra with Yoshida. The teachings of Yoshida allow analysis to be performed on the graphs that were disclosed in Mishra, the analysis being useful for the development of a knowledge base, as per Yoshida, column 1, lines 34-65.

Further, it is noted that that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so, but the teaching, suggestion, or motivation may be found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

Issue 3: Appellant argues that regarding claims 3 and 16, it is not clear how Mishra teaches the limitations recited in claims 3 and 16.

First, it is noted that the term "event relationship network," as in the instant claims, is the same as the interpretation of the term that has been determined for claim 1. It is also noted that on page 58, lines 1-2, Mishra discloses that event graphs comprise non-terminal nodes, terminal nodes, and links. Therefore, a graph comprises both nodes and links. Further, by both the interpretation of event relationship network, which is equivalent to the event graph of Mishra, and the event graph of Mishra, each

event graph may include a subset of the whole, where if the subset has a node, it may be considered an event graph, or an event relationship network.

Further, on page 58, line 24, Mishra includes the instruction "For all rule-ids attached to the node 'n', meaning that each node has rule-ids attached to the node, with each rule-ids designating a particular event, as shown on page 59, line 1. Therefore, when the rule_definition is read on page 57, line 9, the node associated with the rule_definition is read, as the node is the event that is associated with the rule. The event graph is a node with links connecting correlated events, and the present node that is read with the read rule_definition has no correlated events, the rule_definition itself is an event graph consisting of a single node with no links.

Appellant argues the remaining steps of validating the one or more previously generated event relationship networks, completing the one or more previously generated event relationship networks, and outputting the one or more validated and completed even relationship networks is not taught in Mishra. However, each of these steps are taught in Mishra. The method shown on page 57 results in a previously generated rule to be obtained, as demonstrated above, the defining of the tree and modifying 'action' part of the original rule constitutes validating and completing the one or more previously generated event relationship networks, and the method results in the creation of the Rule_b, which is outputted for the creation of the event graph, or event relationship network.

As the method shown on page 57 of Mishra is concerned with generating and updating the event graph, or the event relationship network, the graph is clearly utilized to construct one or more correlation rules, which is found in the disclosure of Yoshida.

Issue 4: Appellant argues that Babson does not disclose subjecting the one or more generated event relationship networks to human review prior to utilizing the one or more generated event relationship networks to construct one or more correlation rules, as required by claims 2 and 15.

First, it is noted that one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Appellant's argument relies on Babson not specifically disclosing showing to the customer an event relationship network. Even if this argument were not spurious, Babson's disclosure involves showing visual representations of the data to a human, allowing the human to make changes before the event graph, or event relationship network, is used for the processing that is taught in the combination of Mishra and Yoshida.

However, as previously demonstrated, the broadest reasonable interpretation of a person of ordinary skill in the networking art in light of Appellant's specification of the term "event relationship network" is an event graph of a form that includes nodes or elements with links of some sort connecting the nodes. As such, the nodes and the relationships between the nodes (links) in a graphical relationship does fall into the

scope of the term "event relationship network" when the term is given the broadest reasonable interpretation of a person of ordinary skill in the networking art in light of Appellant's specification.

In both cases, Babson when combined with the teachings of Mishra in view of Yoshida, does teach having a human view an event graph during the generation or an update of the graph, as the user has an opportunity to make changes (see, for example, Babson at column 2, line 64 to column 3, line 9), constitutes subjecting the generated event relationship network to human review prior to utilizing the event relationship network to construct the correlation rules.

Issue 6: Appellant argues that the motivation set forth by the Examiner to combine Babson with Mishra and Yoshida is insufficient.

First, it is noted that that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so, but the teaching, suggestion, or motivation may be found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

As such, the provided suggestion/motivation of having a human review the event graph to receive from the customer values for parameters to be used with the desired

nodes is a sufficient motivation, as the result of this clearly allows the users to correct any errors that may be introduced by a fully automated system.

Issue 7: Appellant argues that the cited portions of Yemini do not teach or suggest the claimed features of claims 4 and 17.

It is noted that the instant claims only require that a statistical correlation analysis is somehow utilized in the steps of validating and completing. The matrix of Yemini does constitute a statistical correlation analysis, as the matrices are created using statistical analysis, as in Yemini, column 24, lines 29-37. When the matrices, and the creation and analysis thereof, are utilized in the teachings of Mishra and Yoshida, a statistical correlation analysis is used in some fashion with at least the validation and completion steps. Examiner notes that the claim does not disclose how the statistical correlation is performed or utilized.

Issue 8: Appellant argues that it is not clear how the correlation matrix including pairs of the form {Pr,t} where Pr is a probability indication, as in Yemini, teaches or suggests the claimed features of claims 5 and 18.

Claim 5 requires that "the statistical correlation analysis utilizes pairwise correlation analysis, wherein correlation between a pair of events is measured in accordance with one or more statistical measurements." First, it is noted that how the pairwise correlation analysis is utilized is not fully disclosed in the claim, only that a correlation of a pair is measured in accordance with at least one statistical

measurement. Lacking an explicit definition of "pairwise correlation analysis" in the specification, it appears that the term simply means that the correlation analysis is performed with respect to pairs of information. As such, the formation and use of the correlation matrix, which includes pairs, when combined with Mishra and Yoshida does teach this functionality in as much detail as the claim requires.

Issue 9: Appellant argues that with regards to claims 6 and 19, it is not clear how applying a filter to remove weakly correlated data after correlations among events are stored in data file teaches or suggests for a particular event relationship network, determining that links in the event relationship network have a confidence level not less than a given threshold.

The filter of Yemini appears to be the determination of weakly correlated data, which, when combined with the teachings of Mishra and Yoshida, would occur when the event graph is being updated, as the filter does remove nodes.

However, Yemini does not use the term "confidence level." It is noted, though, that Appellant's specification lacks an explicit definition of the term "confidence level" that has a limiting effect on the claim. In the disclosure of Yemini, there are apparently weakly correlated events, as in column 25, lines 9-11, and not weakly, or strongly, correlated events. There must exist some threshold that determines if a correlation is weak or strong. Therefore, the filter determines if a correlation among the events are higher or lower than the threshold, where correlations that are lower (i.e. weakly correlated events) are removed. The confidence level appears to be equivalent to a

measure of whether the correlation is strong or weak, where in the case of Yemini, there are only two possible confidence level, weak or strong (i.e. not weak). When applied to the claim, the threshold, therefore, would be strong (i.e. not weak), where if the confidence is not less than the given threshold, the correlation is maintained, but if the confidence is less than the threshold (i.e. weak), the correlation is removed.

Therefore, clearly, the utilizing the filter in Yemini to filter out weakly correlated data is equivalent to determining that links in the event relationship network have a confidence level not less than a given threshold.

Issue 10: Appellant argues that the motivation set forth by Examiner to combine Yemini, Mishra, and Yoshida is insufficient.

First, it is noted that that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so, but the teaching, suggestion, or motivation may be found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

However, when Yemini is combined with Mishra and Yoshida, Yemini, as indicated by the Examiner in the Office Action mailed 6/1/2007, Yemini allows a user to execute computer code efficiently determining problem events from observable symptoms. Basically, the analysis tools that Yemini provide allows a user to better

evaluate the events, rules, and correlations that are found in the Mishra in view of Yoshida, allowing better optimization of correlation rules used in an event management system.

Issue 11: Appellant argues that it is not clear how Bettini discloses "utilizing the mined patterns to construct the one or more event relationship networks," as in claims 8 and 21.

First, it is noted that Appellant provides absolutely no definition for the term "mining." As such, it appears that mining is equivalent to searching or scanning. As asserted in the Office Action mailed 6/1/2007, this can be found in Bettini page 74, column 1, paragraph 4, which is the same passage as the previously cited page 74, lines 32-50. Step 5 involves scanning the event sequence. As Appellant provides no real insight in how "mining patterns from the event data," or how exactly the mined patterns are utilized in the creation of one or more event relationship networks.

However, the mined patterns of Bettini are used to generate an event graph, which can be seen in Bettini, page 73, figure 2. Though the TAG, which is depicted in Figure 2, refers to a timed finite automata with granularities when Bettini is taken alone, when Bettini is combined with the teachings of Mishra in view of Yoshida and Yemini, it is clear that Figure 2 refers to an event graph, where the nodes are the events, and the links are correlations between the events.

Issue 12: Appellant argues that it is not clear how Bettini teaches or suggests the features of claims 9 and 22.

It is noted that Appellant appears to be taking the example that is presented in the cited theorem of Bettini, which appears on page 71, column 1, paragraph 4, literally. However, the example in Bettini is illustrating a point, where the variables have a probability of occurring at certain times. The teachings, though, show that with knowledge of the relationship of X_0 and X_1 and the relationship of X_1 and X_2, the relationship of X_0 and X_2 may be determined to be one of a certain set of possibilities. This allows correlations between nodes that otherwise would have no correlation to have a determined correlation with a certain measure of certainty between each other. This allows correlations that would otherwise not be present in the event graph (thereby resulting in nodes possibly having no links when a link is warranted) to be present in the graph. As Appellant's specification provides no definition with a limiting effect on the claim of statistical correlation analysis, and no specific disclosure in the instant claim of how statistical correlation analysis is utilized, the teachings of Bettini, when applied to Mishra in view of Yoshida and Yemini, teach this limitation.

Issue 13: Appellant argues that Bettini does not teach or suggest of utilizing pairwise correlation analysis, wherein correlation between a pair of events is measured in accordance with one or more statistical measurements, as in claims 10 and 23.

More specifically, Appellant does not see that correlation between a pair of events is measured in accordance with one or more statistical measurements.

However, when figure 1 is taken in view of the paragraph cited in Issue 12, and the interpretation therein, and the arguments presented in Issue 8, it is apparent that the limitations required by claim 10 are addressed in the arguments presented in Issue 12, as pairs of data are analyzed for the statistical correlation analysis, which constitutes "pairwise correlation analysis."

Issue 14: Appellant argues that Tenev does not teach or suggest computing a first correlation metric and a second correlation metric, the second correlation metric being representative of a correlation between events that is stronger than a correlation between events represented by the first correlation metric, as in claim 28.

First, it is noted that claim 28 only requires that two correlations metrics are computed, where the one metric represents a correlation that is stronger than a first, where an automated pairwise statistical correlation procedure is used.

It is noted that there is no requirement as to how exactly the two correlation metrics are generated with the second correlation metric being representative of a correlation between events that is stronger than a correlation of event represented by the first correlation metric, or even that the differences between the two correlation metrics are even on purpose (i.e. two correlation metrics where the claimed relation just happens to occur still meets the claim limitation).

It is further noted that there is no claimed relation between either the first or the second correlation metrics or the correlation between events, where the two metrics could be derived from completely different event relationship metrics.

Lastly, it is noted that there is no requirement that the correlation strength between events even be calculated, only that the second correlations happen to be stronger than the first.

Therefore, the only modification to the Mishra reference that is required is to perform the method in Mishra multiple times with different event graphs, thereby eventually creating a situation where a correlation of events happens to have a stronger correlation between events than another correlation of events.

It is noted that Tenev does disclose utilizing different methods for producing different graphs from the same set of data (see, for example, figure 4). When Tenev is combined with Mishra, different graphs would be produced from the same set of events, where one graph is likely to have different strength in correlations than another.

Issue 15: Appellant argues that Tenev does not teach or suggest the limitations of claim 9.

It is noted, however, that the combination of Tenev and Mishra teach that an event data window within which event data is considered is specified. As in the specification, page 11, lines 16-19, a window is apparently a length of time. Therefore, any information that is collected in the combination of Mishra and Tenev must have been collected during a certain time period, where the time period constitutes a window. The claim does not require that the window size is predetermined or static, so even in situations where the information is collected and considered on a constant basis, the

window size would then simply be equal to the time between the initial collection and the current time, with the window size being specified on a continual basis.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Scott Christensen

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